

ANULI NABO
Plaintiff

vs.

**TEXAS SOUTHERN UNIVERSITY
COLLEGE OF PHARMACY AND
HEALTH SCIENCES AND DR. BARBARA
E. HAYES,**
Defendant

FILED
LOREN JACKSON
DISTRICT CLERK
HARRIS COUNTY, TEXAS
CAUSE NO.
2010 JUN - 3 PM 5:16

2010 - 34702

DEPUTY

IN THE DISTRICT COURT

38 JUDICIAL DISTRICT

HARRIS COUNTY, TEXAS

p4

By _____
Deputy _____
Harris County, Texas _____
Time: _____

JUN - 3 2010

FILED
Harris County, Texas
District Clerk
June 3, 2010

**PLAINTIFF'S ORIGINAL PETITION FOR DECLARATORY JUDGMENT AND REQUEST FOR
A TEMPORARY INJUNCTION AND FOR A PERMANENT INJUNCTION
WITH REQUEST FOR DISCLOSURE**

TO THE HONORABLE JUDGE OF SAID COURT:

COMES NOW, ANULI NABO, hereinafter referred to as Plaintiff, complaining of Texas Southern University College of Pharmacy and Health Sciences and Dr. Barbara E. Hayes, hereinafter referred to as Defendants, and in support thereof would show the Court the following:

I.

DISCOVERY CONTROL PLAN

Plaintiff intends to conduct discovery under level 2 of Texas Rule of Civil Procedure 190.

II.

JURISDICTION

Plaintiff, Anuli Nabo resides in Houston, Harris County, Texas. The last three digits of the driver's license number of Plaintiff are 839. The last three digits of the social security number for Plaintiff are 431. Defendants, Dr. Barbara E. Hayes as an agent for Defendant, Texas Southern University College of Pharmacy and Health Sciences, principal office located in Houston Harris County, Texas. The facts and circumstances out of which this cause of action arises have all occurred in Harris County, Texas.

Defendant, Texas Southern University College of Pharmacy and Health Science may be served

with process through Gita Bolt, General Counsel for Texas Southern University College of Pharmacy and Health Sciences at 3100 Cleburne Street, Hannah Hall, Room 310, Houston, Texas 77004.

Defendant, Dr. Barbara Hayes, Dean may be served with process through Gita Bolt, General Counsel for Texas Southern University College of Pharmacy and Health Sciences at 3100 Cleburne Street, Hannah Hall, Room 310, Houston, Texas 77004.

III.

The subject of the suit is academic status of Plaintiff at the end of spring semester at the Texas Southern University College of Pharmacy and Health Sciences located in Houston Harris County, Texas. Plaintiff will show that he has followed the established procedures in attempting to resolve, with Defendant, Dean Barbara E. Hayes.

IV.

FACTS

On June 1, 2010 Plaintiff received an E-mail (See Plaintiff's Exhibit "A" and incorporate by reference) that she was subject to dismissal from the Professional Program and that the only opportunity to appeal her dismissal was utilizing a new appeal process that is currently being developed by the College's Administration. Plaintiff by this action of Defendant is prevented from registering in the Summer 2010 Semester without due process.

Plaintiff would show that she enrolled in Introductory Pharmacy Practice Experiences (IPPE) Phar 618 Course Syllabus (See Plaintiff's Exhibit "B" and incorporated by reference). According to the syllabus a student's final grade in the course is determined upon the following (1) 5 case studies (2) 1 group project (3) 1 evaluation of IPPE and (4) 1 final exam grade. Plaintiff would show this Honorable Court that Defendants' Agent (Course Coordinator) refused to assign Plaintiff to a site to obtain the IPPE hours that was required for the course. Plaintiff would show that the Course Coordinator did not assign her a site and she had zero (0) hour credit for the course.

Plaintiff would show that she made numerous attempts to secure a site IPPE and Defendant and or Defendants' Agent refused to assign her a site. Plaintiff would show that she did sustain irreparable harm and she does not have an adequate remedy at law unless this Court restrain the Defendant from capricious, arbitrary; and or prejudiced academic actions conduct.

Plaintiff would further show that in course Number Phar 635 Description Practice Spring 2010 a course syllabus was given to the study which constitutes a contract (See Plaintiff's Exhibit "C" incorporate by reference). The Syllabus Contract clearly states that there will not be any curves of any grade for this course. Plaintiff would show that Defendants and or its Agents curved the grade to allow certain persons to pass the course. This was all done without due process being given to Plaintiff which Plaintiff does not have an adequate remedy at law and unless Defendants are Restrained from their capricious, arbitrary; and or prejudiced academic actions conduct.

IV.

Plaintiff requests that Defendant be refrained from these actions of capricious, arbitrary and or prejudicial action upon her.

V.

This Application for Declaratory Judgment and for Injunction Relief has become necessary to decline, restrain and enjoin the action of the Defendants which is contrary to the rule of governance of the Texas Southern University College of Pharmacy and Health Sciences. The actions of Defendants have deprived Applicant of her rights to due process and proper governance of the Texas Southern University College of Pharmacy and Health Sciences.

Applicant would show in support of this Application that the Defendants, Texas Southern University College of Pharmacy and Health Sciences is a State Institution of higher learning and that Defendants, Dr. Barbara E. Hayes are under the colors of State Law and thereby State actions.

Applicant will be deprived of her rights of enrollment to the professional Pharmacy curriculum of

the Texas Southern University College of Pharmacy and Health Sciences. Applicant would further show that the injury and harm that would be occasioned by Defendant, Texas Southern University College of Pharmacy and Health Sciences and Defendant, Dr. Barbara E. Hayes greatly exceed any injury and harm granted. The granting of said relief would merely allow Applicant to enroll in the Summer Semester and preserve the status quo.

Applicant is ready, willing and able to post a bond sufficient to satisfy any damage that Defendants might have or which arise by reason of the Temporary Restraining Order and Temporary Injunction in the event this Court grants the same.

WHEREFORE PREMISES CONSIDERED, Applicant prays for relief as follows:

- (1) That a Temporary Restraining Order be granted without notice to Defendants named herein because it clearly appears from the facts as stated and from the Affidavits attached hereto that Defendants will continue to deprive and prevent Applicant from enrolling the Texas Southern University College of Pharmacy and Health Sciences curriculum for the Summer Semester 2010.
- (2) That such Temporary Order be issued to continue in force until a date to be designated for a hearing on the Application for Temporary Injunction Enjoining Defendants from not allowing your Applicant to enroll in the Texas Southern University College of Pharmacy and Health Sciences.

Respectfully submitted,

DON R. CAGGINS, SR.

BY:



DON R. CAGGINS, SR.
ATTORNEY AT LAW
State Bar No.: 03591700
2030 North Loop West, Suite 285
Houston, Texas 77018
(713) 683-0088 (713) 683-8494 FAX

**ATTORNEY FOR PLAINTIFF
ANULINABO**

CAUSE NO. 2010-34702

FILED
Loren Jackson
District Clerk
JUN - 3 2010
Harris County, Texas
Sheriff

ANULI NABO
Plaintiff

vs.

**TEXAS SOUTHERN UNIVERSITY
COLLEGE OF PHARMACY AND
HEALTH SCIENCES AND DR. BARBARA
E. HAYES,
Defendant**

IN THE DISTRICT COURT

281 JUDICIAL DISTRICT

HARRIS COUNTY, TEXAS

VERIFICATION

BEFORE ME, the undersigned authority, personally appeared Anuli Nabo, who being duly sworn, deposed as follows:

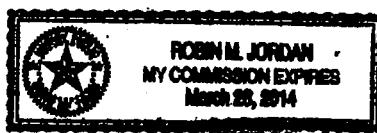
"My name is Anuli Nabo, I am at least eighteen (18) years of age and of sound mind. I am personally acquainted with the facts alleged in Plaintiff's Original Petition for Declaratory Judgment and Request for a Temporary Injunction and for a Permanent Injunction with Request for Disclosure. I hereby swear that the statements in support of Plaintiff's Original Petition for Declaratory Judgment and Request for a Temporary Injunction and for a Permanent Injunction with Request for Disclosure are true and correct."

Anuli Nabo
Anuli Nabo

THE STATE OF TEXAS §

COUNTY OF HARRIS §

SUBSCRIBED AND SWORN TO BEFORE ME, on the 3rd day of June, 2010 to certify which, witness my hand and seal of office.



ROBIN M. JORDAN
NOTARY PUBLIC IN AND FOR THE
STATE OF TEXAS

Academic status at end of spring semester 2010 - Yahoo! Mail

YAHOO! MAIL
Classic

FILED
LOREN JACKSON
DISTRICT CLERK
HARRIS COUNTY, TEXAS

EXHIBIT

"A"

Academic status at end of spring semester 2010 PM 5:17

Tuesday, June 1, 2010 9:41 AM

From: "Hayes, Barbara E" <Hayes_BE@tsu.edu>
To: anullokafor_ng@yahoo.com

DEPUTY

Dear Ms. Nabo,

Based on the review of your current grades for the spring semester 2010, you are subject to dismissal from the professional program. After you receive official notification, via certified mail, you will have the opportunity to appeal your dismissal utilizing a new appeals process that is currently being developed by the college's administration. Please see Dr. Leonard for details, ONLY after receipt of your certified notice. Your certified letter must be presented to Dr. Leonard at the time of your appointment.

Thank you for your attention to this important matter.

Sincerely,
Dean Hayes

FILED
LOREN JACKSON
DISTRICT CLERK
HARRIS COUNTY, TEXAS

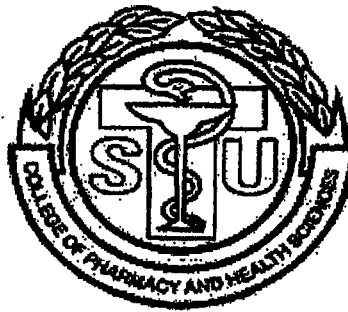
EXHIBIT

18

Texas Southern University
College of Pharmacy and Health Sciences
DEPUTY

p 5

Office of Experiential Training



Introductory Pharmacy Practice Experiences (IPPE) Course Syllabus

Dr. Adlia M. Ebeid

PHAR 618

Monday
10:00 AM – 10:50 AM
Fall 2009

Course Description: An introduction into pharmacy practice experiences and the disciplines of pharmacy.. The course content provides students with information aspects of institutional pharmacy in an effort to supplement the students pharmacy practice experiences through lectures, assignments, projects and a final exam.

Course Coordinator: Adlia M. Ebeid, B.S., Pharm. D.
Director of IPPE
ebeidam@tsu.edu
(713) 313-1232
TMC McGovern Campus, 2-25G
Available by appointment only

Class Time/Location: Monday 10:00 AM – 10:50 AM, NSC 270

Pre-requisites: Successful completion of 2nd professional pharmacy year.

Assignments/Examinations: 5 Case Study SOAP @ 20 points each
1 Group Special Project @ 100 points
1 Evaluation of IPPE @ 100 points
1 Final Examination @100 points

Criteria for Grades:

Letter Grade	Percentage	Points Earned
A+	97 – 100	388 – 400
A	93 – 96.99	372 – 387
A-	90 – 92.99	360 – 371
B+	87 – 89.99	348 – 359
B	84 – 86.99	336 – 347
B-	81 – 83.99	324 – 335
C+	78 – 80.99	312 – 323
C	75 – 77.99	300 – 311
All Grades Below "C" are failing grades		
C-	72 – 74.99	288 – 299
D+	69 – 71.99	276 – 287
D	66 – 68.99	264 – 275
D-	63 – 65.99	252 – 263
F	< 63	<252

Course Objectives: The purpose of this course is to expose pharmacy students to different aspects of institutional pharmacy practice through Introductory Pharmacy Practice Experiences (IPPE) and didactic course material with scheduled assignments.

Attendance: This is mandatory to receive the most benefit from this course and the full points of a participation grade. Please refer to Student Handbook for guidelines for additional information regarding attendance.

Special Project: Each student will be assigned to a group who will design a patient chart and incorporate all of the necessary tabs including an example and a description for each of the tabs. Students are required to have a minimum of 18 tabs and will be graded on creativity, neatness, thoroughness, and content.

Case Study: Case study assignments will be given to assigned groups as a take home project. Each group is responsible for researching the case study and stating the subjective, objective, assessment and plan (SOAP) for the assigned patient and extracting additional necessary information from the patient charts. Groups will be required to hand in their SOAP on this patient in the subsequent class meeting. Students should be prepared to answer questions and defend their recommendations and participate in open discussion. All students will be required to turn in their SOAP presentation (1 per group) for a group grade on the day of the discussion.

Final Exam: The final exam will assure the objectives of this course were met by assessing the knowledge of each student about institutional pharmacy, class lectures/assignments and their IPPE experiences.

Disclaimer: Make-ups are NOT given for missed examinations or assignments, regardless of the reason missed. If the final examination is missed for a valid and verifiable emergency situation, a make-up exam MAY be given, at the discretion of the instructor. Also, the use of ELECTRONIC EQUIPMENT (i.e. cell phones, PDAs, pagers, etc) is strictly prohibited during class hours and can result in disciplinary action unless permission has been given to the student by the course coordinator.

STUDENTS ARE EXPECTED TO REFRAIN FROM ANY FORM OF CHEATING ON EXAMINATIONS AND OTHER ASSIGNMENTS. CHEATING WILL BE DEALT WITH AS PRESCRIBED BY COLLEGE AND UNIVERSITY POLICIES.

Lecture Schedule:

Week	Date	Topic(s)
1	August 24, 2009	Course Introduction and IPPE orientation
2	August 31, 2009	Rx Portfolio
3	September 7, 2009	Labor Day Holiday (No Class)
4	September 14, 2009	<i>Experiential</i>
5	September 21, 2009	Parts of a Patient's Chart
6	September 28, 2009	SOAP/Case Study Preparation
7	October 5, 2009	Lab Values/Abbreviations
8	October 12, 2009	Drug/Drug Interactions
9	October 19, 2009	IPPE evaluation and reflection Special Project Deadline
10	October 26, 2009	Case Study #1
11	November 2, 2009	Case Study #2
12	November 9, 2009	Case Study #3
13	November 16, 2009	Case Study #4
14	November 23, 2009	Case Study #5
15	November 30, 2009	IPPE evaluation and reflection
16	December 7 - 11	Final Examination Week

* The schedule is subject to change at the discretion of the instructor

Course Contract

I acknowledge, by signing below, that I have been given a handout and told of the Course Instructions (Rules and Regulations) for this course during Orientation on the first class day. I have also been informed that this information is available to me on the TSU Blackboard under the course name of Pharmacy Seminar. I further acknowledge that whether or not I attended the first class day (Orientation) that it is my responsibility to obtain the rules and regulations for this course for which it will be governed.

Student Name (Print)

Student ID

Date

Student Signature

FILED
LOREN JACKSON
DISTRICT CLERK
HARRIS COUNTY, TEXAS

EXHIBIT

404

Course Number/ Title: PHAR 635 – Prescription Practice

2010 JUN -3 PH 3-1

P43

Catalog/Bulletin #:**Semester/ Year:** Spring 2010

8V — DEPUTY

Schedule: Day(s) Monday & Wednesday Place Rm 234 Time 1:00pm – 1:50pm
Friday Rm 106 11:00am – 11:50am

Course Coordinator: Professor Kingsley Okafor**Course Instructors:**

Name	Office Location	Office Phone	Office Hours
Dr. Kingsley Okafor	Gray Hall 227	713-313-7567	Tues & Thurs. 9:00AM – 1:00PM Or by appointment
Atty Webb Jones		713-313-4492	
Dr. Cyril Abobo	Gray Hall 241	713-313-7560	
Dr. Doris Jackson	Gray Hall 209	713-313-4223	
Dr. Alma Camicle	Gray Hall 241	713-313-4492	
Dr. Eaton-Maxwell	TMC	713-313-1241	
Dr. Uche Ndefo	TMC	713-313-7569	
Dr. Ivy Poon	Gray Hall 241E	713-313-4400	
Dr. Darego McClayton	TMC	713-313-1224	
Dr. Mathews	MD Anderson	713-313-4492	
Dr. Osemene	Gray Hall 241F	713-313-1887	
Dr. Giwa	Methodist Hospital	713-313-4492	
Dr. Tangu		713-313-4492	
Dr. Erica Jackson		713-313-4492	
Dr. Aisha Moultry	Gray Hall 241A	713-313-7553	
Dr. Chang		713-313-1215	
Dr. Nwabeke	HCHD	713-313-4492	
Dr. Davis		713-313-4492	
Dr. Gee		713-313-4492	

Catalog/Bulletin Course Description (Purpose & Goals of course)

The Pharmacy 635, Prescription Practice Lecture and Laboratory are designed to prepare the student for the contemporary practice of pharmacy by stimulating pharmacy practice and assisting the student to become aware of the care, judgmental, ethical required in the practice of pharmacy.

Prescription Practice also confronts the student with some of the issues that a pharmacist must face in the day-to-day practice of pharmacy. The course is intended to challenge the student's reasoning, analytical, problem solving, and auditing skills. It also is intended to challenge the student's command of prerequisite pharmaceutical knowledge and their ability to bring these factors to bear in the dispensing and delivery of prescriptions and in the communication of drug information to the public and to other health professionals.

Course Objectives:

At the conclusion of PHARM 635 Prescription Practice, the student will be able to:

1. Describe and understand the following:

- a. Parts of a prescription
- b. Parts of a label
- c. Pharmacy Law Regarding Class A Pharmacy
- d. Pharmacy Law Regarding Controlled Substances
- e. Prescription Changes (Errors/Omissions/Documentation)
- f. Assessment of Patient Medical Records (patient confidentiality & ethics)
- g. Patient Counseling
- h. Automation in Pharmacy
- i. Specialized Pharmacy Practice
- j. Top 400 Drugs
- k. Specialized compounding skills/services; including aseptic technique, TPNs, and home IV infusion

2. Describe therapy or treatment management concerning the patient presented:

a. Therapeutic Problems

- Adverse Drug Reactions (ADRs)
- Drug Interaction (DIs)
- Inappropriate drug therapy (wrong indication, wrong regimen, contraindication)

b. Drug Use Evaluation (DUE) / Medication Use Evaluation (MUE)

Prerequisites: Third Professional Year Standing in the College of Pharmacy and Health Sciences (successful completion of all 500-level courses in the College of Pharmacy and Health Sciences).

Co-Requisite: Prescription Practice Laboratory or Previous Enrollment and successful passage of the Prescription Practice Laboratory.

Required Text(s):

- Drug Information Handbook, 15th Edition, Lacy CF, Armstrong LL, Goldman MP, 2007 Lexi-Comp, Inc.
- Texas Pharmacy Laws and Regulations (Class A Pharmacy)

Recommended Text(s): (including other suggested course materials)**Grading Criteria:****5- Exams:**

- o 4 — Hourly 40% (10% each)
- o 1 - Comprehensive Final 40%

4- Quizzes 20% NO bonuses

- All Grades below "C" are failing grades; 75% is a passing grade.
- There will be NO makeup for exams or quizzes

THERE WILL BE NO CURVING OR ROUNDING NOR DROPPING OF THE LOWEST GRADE

The final will or will not be cumulative and will count 40% of the total grade.

Grading Scale: The COPHS grading scale will be used.

Percentage Score	Letter Grade
92-100	A
90-91.99	A-
88-89.99	B+
82-87.99	B
80-81.99	B-
77-79.99	C+
75-76.99	C (minimum passing grade)
70-74.99	C- (must retake course)
67-69.99	D+
65-66.99	D
00-64.99	F

Make-up exam policy: There will be NO makeup for exams or quizzes

Students registered in Pharm 635 are required to know the Top 400 Drugs. The following list represents the items subject to being tested on drug quizzes and examinations:

Questions from the Top 400 Drug list will be on quizzes and examinations.

1. Trade name(s)
2. Generic Name and Generic equivalents
3. Indications for Use (including unlabeled uses)
4. Available Strengths (How supplied)
5. Available Dosage Forms
6. Contraindications
7. Clinically Significant Drug-Drug Interactions
8. Adverse/side effects
9. Drug-Food and Drug-Disease State Interactions
10. Usual adult doses and/or children's doses (if intended for children or available in pediatric dosage forms)
11. Usage in pregnancy and lactation
12. Emergency treatment during over dosage
13. Special or unique uses, warnings or precautions
14. Appropriate Patient Counseling Information
15. Mechanism of Action

DRUG QUIZZES: The drug quizzes shall be based on the Top 400 drugs. Quizzes are part of the lecture grade. These drug quizzes may be multiple choice or written, but students are to have available for all scheduled quizzes. As the students must study the drugs on the Top 400 list on their own, it is

essential that a routine and discipline be established early in the course for the study of these drugs. The following list represents the items subject to being tested on drug quizzes.

- Trade name(s)
- Generic Name and Generic equivalents
- Indications for Use (including unlabeled uses)
- Available Strengths (How supplied)
- Available Dosage Forms
- Contraindications
 - Product Identification
- Clinically Significant Drug-Drug Interactions (CSDDI's)
- Side Effects
- Drug-Food and Drug-Disease State Interactions
- Manufacturer(s) and/or Company Trade Marks
- Usual adult doses and/or Children's doses (if intended for children or available in pediatric dosage forms)
- Usage in Pregnancy and Lactation
- Emergency treatment during over-dosage
- Special or Unique uses, warnings or precautions
- Appropriate Patient Counseling Information
- Mechanism of Action (Pharmacology)

Drug quizzes are RANDOM SAMPLINGS of the students' drug knowledge. No quiz is comprehensive over, nor will any quiz cover all seventeen of the items listed above. Trying to guess which item or items will be on a given quiz is akin to Russian roulette. Study all seventeen items for each drug.

Students should demonstrate appropriate professional conduct as described in the TSU **Student Code of Conduct** (2007, TSU web site); **TSU Student Handbook 2009-2010**; and the COPHS **Student Academic Handbook**, approved fall, 1009. These conducts include, but are not limited to, mandatory class attendance, prompt classroom arrival, no cheating, plagiarism, or other unprofessional conduct (such as cell phones or text messaging). No electronic devices (including cell phones, computers, PDAs or programmable calculators) are allowed during examinations.

Will examinations be returned to student? yes; no

Students: Self assessment of your performance in COPHS classes is critical to maintaining good academic standing in the college. We are offering the following helpful hints to assist you with your self assessment:

- Pick up the results of your examinations in a timely manner
- Review your examination results with the instructor
- Follow on with the instructor to assure that examination grades are corrected when there is grading error
- Compute your pre-final examination course grade based on the results of each examination, quiz or other assigned work
- Meet with the instructor to get answers to your questions during conference hours or by appointment
- Document individual issues of concern with the department chair.

Please make sure that you have performed these student responsibilities. This will help you understand the status of your academic performance in classes and minimize the types and

number of complaints that you might have after semester grades are awarded.

Course Evaluations will be given at the end of each course. Participation is highly recommended. These evaluations are used in faculty evaluation and curricular evaluation and improvement.

Tentative course schedule:

DAY/DATE	LECTURE TOPICS	INSTRUCTOR
1/18/2010	<i>Martin Luther King, Jr. Day Holiday</i>	
1/20/2010	Objectives / Orientation	Dr. Okafor
1/22/2010	Pharmacy Practice Residency (including Informatics) <i>New</i>	Dr. Ogechi Eshleman – HCHD
	MODULE 1 – Legal Aspects of Pharmacy	
1/25/2010	Elements of Prescriptions	Dr. Okafor
1/27/2010	Transfers and Fraudulent Prescriptions	Dr. Okafor
1/29/2010	Controlled Substance Prescriptions	Attorney Webb Jones
2/1/2010	Drug Inventory, Storage, Security, Control Procedures	Attorney Webb Jones
2/3/2010	Medication Records / Medical Chart / HIPPA (<i>New</i>)	Dr. Abobo
2/5/2010	SOAP/Patient Assessment/Data Collection	Dr. Abobo
2/8/2010	Quiz #1	
2/10/2010	Exam #1:	Drs. Okafor, Abobo, and Atty J
2/12/2010	Exam #1 REVIEW	
	MODULE 2 - Communication and Counseling	
2/15/2010	Patient Counseling; Traditional and Motivational Interviewing(<i>New</i>)	Dr. Jackson
2/17/2010	Patient Counseling/Spanish Language in Pharmacy Practice	Dr. Carnicle
	MODULE 3 - Adverse Events and Interactions	
2/19/2010	Drug Product Selection/Adverse Drug Reactions/clinically significant DI's & Their Management	Dr. Eaton-Maxwell
	MODULE 4 - Disease State Management (MEDICATION PRIMER)	
2/22/2010	Disease State Management in Hypertension 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of CV related conditions 3) Know current treatment guidelines 4) Understand and Interpret associated lab values 5) SOAP applied Case studies	Dr. Ndefo
2/24/2010	Disease State Management in Hyperlipidemia 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of CV related conditions 3) Know current treatment guidelines 4) Understand and Interpret associated lab values 5) SOAP applied Case studies	Dr. Ndefo
2/26/2010	Disease State Management in Anticoagulation 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of CV related conditions 3) Know current treatment guidelines 4) Understand and Interpret associated lab values 5) SOAP applied Case studies	Dr. Poon
3/1/2010	Disease State Management in Diabetes 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of endocrine related conditions 3) Know current treatment guidelines 4) Understand and Interpret associated lab values 5) SOAP applied Case studies	Dr. Ndefo

3/3/2010	Quiz #2	
3/5/2010	Exam #2	Drs. Jackson, Carnicle, Ndefo, and
3/8/2010	Exam #2 REVIEW	
3/10/2010	Disease State Mgmt in Infectious Disease—Part 1 (Antimicrobial Prescribing Principles and Antibiotic Review) 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of infectious disease related conditions 2) Know current treatment guidelines 3) Understand and Interpret associated lab values 4) SOAP applied Case studies	Dr. Maclayton
3/12/2010	Disease State Mgmt in Infectious Disease—Part 2 (Antifungal Review) 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of infectious disease related conditions 2) Know current treatment guidelines 3) Understand and interpret associated lab values 4) SOAP applied Case studies	Dr. Maclayton
	SPRING VACATION – MARCH 15-21, 2009	
3/22/2010	Disease State Mgmt in Infectious Disease—Part 3 (Antiviral Review – Hepatitis) 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of infectious disease related conditions 2) Know current treatment guidelines 3) Understand and Interpret associated lab values 4) SOAP applied Case studies	Dr. Maclayton
3/24/2010	Disease State Management in Chemotherapy 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of oncology related conditions 2) Know current treatment guidelines 3) Understand and Interpret associated lab values 4) SOAP applied Case studies	Dr. Mathews – MD Anderson
3/26/2010	Disease State Management in Asthma/COPD 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of respiratory related conditions 3) Know current treatment guidelines 4) Understand and Interpret associated lab values 5) SOAP applied Case studies	Dr. Osemene
3/29/2010	Disease State Management in Neurology (New) 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of psych-neuro related conditions 3) Know current/applicable treatment guidelines 4) Understand and Interpret associated lab values 5) SOAP applied Case studies	Dr. Giwa – Methodist Hospital
3/31/2010	Disease State Management in Psychiatric 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of psych-neuro related conditions 3) Know current/applicable treatment guidelines 4) Understand and interpret associated lab values 5) SOAP applied Case studies	Dr. Giwa – Methodist Hospital
	EASTER HOLIDAY – APRIL 2 – 4, 2009	
4/5/2010	Disease State Management in Gastrointestinal (New) 1) Identify drugs from Top 400 2) Identify OTC/herbals used in the treatment of GI related conditions 3) Know current/applicable treatment guidelines 4) Understand and Interpret associated lab values 5) SOAP applied Case studies	Dr. Tangu
4/7/2010	Quiz #3	
4/9/2010	Exam #3	Drs. Maclayton, Mathews, Oser Giwa, Tangu

4/12/2010	Exam #3 REVIEW	
MODULE 5 – Family Practice		
4/14/2010	Pediatric and Neonatal Pharmacotherapy and Prescriptions	Dr. Erica Jackson
4/16/2010	Women's Health Issues	Dr. Aisha Moultry
4/19/2010	Men's Health Issues	Dr. Okafor
MODULE 6 – Pain Management		
4/21/2010	Disease State Management in Pain	Dr. Chang
4/23/2010	Quiz #4	
4/26/2010	Exam #4	Dr's Moultry, Okafor, Chang, and Jackson
4/28/2010	Exam #4 REVIEW	
MODULE 7 – Sterile Products		
4/30/2010	Principles of Aseptic Technique/Admixture	Dr. Nwabeke – HCHD
5/3/2010	Total Parenteral Nutrition (TPN)	Dr. Davis
5/5/2010	Applying Principles of Home IV Infusion	Dr. Carnicle
MODULE 8 – Other Specialized Areas		
5/7/2010	Specialized Pharmacy Practice & More: <ul style="list-style-type: none"> • Pharmacist Immunization Delivery - TBA • Compounding Services – Dr. D. Gilbert; Total Pharmacy and Compounding Services • Automation in Pharmacy (E-Prescribing) - TBA 	Dr. Gee
5/10/2010	COMPREHENSIVE FINAL EXAM	Drs. Okafor, Abobo, Jackson, Carnicle, Poon, Maclayton, Maths Ossemene, Giwa, Moultry, Eaton-Maxwell, Nwabeke, Azuonye, A Jones, Davis, and Chang.

Course Learning Objectives: (at the successful completion of this course, the student should know):

"Introduction: Course Goals & Objectives"

A student should be able to:

1. Describe all the rules and regulations of the course
2. Understand the learning objectives and course competencies

"The Prescription: Parts of a Prescription"

A student should be able to:

1. Describe the legal parts of a prescription
2. Identify all legal authorized prescribers
3. Identify and transcribe patient directions
4. Understand the importance of an audit trail
5. Understand the role and importance of auxiliary labels
6. Define what the differences are between generically equivalent, pharmaceutically equivalent and therapeutically equivalent drug product selection
7. Understand the legal requirements for generic substitution of a prescription medication
8. Understand the Texas Medicaid maximum allowable cost problem
9. Describe the legal requirements for transferring a prescription

10. Understand the role of supportive personnel and the limitations of their job
11. Identify when a medication is being prescribed for an unlabeled use and how to handle such a situation
12. Understand the importance of prescription blank security
13. Understand the legal requirements for filling out of state prescriptions
14. Understand the legal requirements for filling prescriptions from foreign countries
15. Understand the legal requirements for refilling prescriptions and the differences between controlled and non-controlled prescriptions.

Okafor

"The Prescription: Legal Issues"

A student should be able to:

1. Identify who can legally fill a prescription
2. Understand the rules governing the filling of a controlled substance prescription compared to a non-controlled substance prescription
3. Describe the rules regarding prescription ownership

"The Prescription: Errors & Omissions"

A student should be able to:

1. Handle prescriptions with incomplete information
2. Identify and handle prescriptions with illegible and inappropriate information
3. Implement the appropriate procedure for making changes on prescriptions (medication, strength, regimen, and indication changes) and know the appropriate documentation required for such changes

"Patient Medical Records"

A student should be able to:

1. Understand Obra '90 requirements as it relates to Drug Utilization Review
2. Identify the parts of a medical record and their role in patient care
3. Assess patient medical records
4. Understand the importance of patient confidentiality and ethics.

"Therapeutic Problems"

A student should be able to:

1. Understand procedures which can be taken to reduce medication errors
2. Define different therapeutic problems such as adverse drug reactions, drug interactions (drug-drug, food-drug, laboratory), toxicity, contraindications dosage errors
3. Define an adverse drug reaction
4. Understand the importance of reporting adverse drug reactions
5. Identify the types of adverse drug reaction
6. Identify risk factors associated with adverse drug reactions
7. Identify the differences in probability of adverse drug reactions
8. Identify the different adverse drug reaction reporting mechanisms
9. Understand how special patient populations can be effected adversely by drug (e.g. pregnancy patients)
10. Understand the different ways in which drug interactions manifest themselves
11. Define a drug interaction
12. Distinguish between the different types of drug interactions
13. Understand the differences in the significance, onset and severity of drug interactions
14. Understand the differences in the types of drug interaction documentation levels
15. Identify things which can affect the variability in patient response to drug interactions
16. Implement the proper procedure for handling a therapeutic problem once it is identified

Course Competencies (upon completion of this course, the student should be able to):
Any other pertinent information:

Use the following pages to check off the COPHS Terminal Outcomes appropriate for your course (pages 4-6).

The pages following the TSU Terminal Outcomes are the Center for the Advancement of Pharmaceutical Education (CAPE) outcomes & supplemental outcomes. Please use these pages to check off the appropriate course outcomes (pages 5-27).

COPHS terminal outcomes (Please check the appropriate outcomes on the enclosed file): TSU Terminal Outcomes (Revised Version)

TEXAS SOUTHERN UNIVERSITY



3100 CLEBURNE AVENUE, HOUSTON, TEXAS 77004

TSU/COPHS Terminal Outcomes for Entry Level Pharm.D. Program

Following the completion of the educational requirements for licensure as a pharmacist in the state of Texas and satisfying the requirements of the University for the Doctor of Pharmacy degree, the Doctor of Pharmacy graduate of Texas Southern University College of Pharmacy and Health Sciences should be proficient in the following areas:

I. Provision of Patient-Centered Care

- | | |
|-------------------------------------|--|
| <input type="checkbox"/> | 1. Gather and organize pertinent patient information in order to identify ongoing or potential drug-related problems. |
| <input type="checkbox"/> | 2. Plan and implement continuous patient evaluation to anticipate, prevent, and manage drug-related complications observed during pharmacotherapeutic treatment including the presence of a disease or medical condition. |
| <input type="checkbox"/> | 3. Provide patient education to maximize overall health by advising patients to embrace responsible self-therapy and preventive measures to avoid serious complications of chronic diseases that disproportionately affect minority populations. |
| <input type="checkbox"/> | 4. Interpret and evaluate patient-specific clinical data, research evidence, and other related information to determine appropriate medication therapy. |
| <input type="checkbox"/> | 5. Collaborate with physicians and other health care professionals to formulate a patient-specific medication therapy plan. |
| <input type="checkbox"/> | 6. Recommend appropriate medical supplies and devices for the patient. |
| <input type="checkbox"/> | 7. Evaluate complementary and alternative treatment modalities and provide guidance to patients and health care professionals in their use. |
| <input checked="" type="checkbox"/> | 8. Review prescriptions and medication orders for accuracy and appropriateness by assessing for indication, drug interactions, dosage, generic, equivalency, storage, and proper method of administration. |
| <input checked="" type="checkbox"/> | 9. Prepare and dispense medications to patients. |
| <input type="checkbox"/> | 10. Measure, calculate, and compound quality sterile and/or other dosage forms that meets a patient's unique clinical needs. |
| <input type="checkbox"/> | 11. Evaluate and interpret laboratory data obtained from the patient to identify deviations that require medication therapy, monitoring, and/or extended management. |
| <input type="checkbox"/> | 12. Monitor pharmacist-provided patient care and re-assess treatment and/or modify the care to improve the treatment |
| <input type="checkbox"/> | 13. Apply pharmacokinetic principles to design and/or adjust an individualized dosage regimen for the patient. |

14. Document all rendered pharmacist-provided care in patient's record to enable communication and collaboration among health professionals.

II. Management of the Practice

- | | |
|-------------------------------------|---|
| <input type="checkbox"/> | 15. Establish rapport with pharmacy staff by respecting lines of communication and understanding the goals and objectives of a pharmacy practice environment. |
| <input checked="" type="checkbox"/> | 16. Comply with federal, state, and local laws and related regulations, which affect the practice of pharmacy. |
| <input type="checkbox"/> | 17. Utilize information management technology and pharmacy business computer systems for pharmacy practice management. |
| <input type="checkbox"/> | 18. Recruit, retain, develop, and assess pharmacy staff according to the standard operating procedures of the practice setting. |
| <input type="checkbox"/> | 19. Familiarize and/or educate staff in applicable government, legal, and professional office policies. |
| <input type="checkbox"/> | 20. Understand business planning needs for the provision of patient-centered medication therapy management services. |

III. Management of Medication Use Systems

- | | |
|--------------------------|---|
| <input type="checkbox"/> | 21. Participate in pharmaceutical care systems and/or processes to: recognize, report and manage medication errors and adverse drug reactions; and prevent occurrence of problems by implementing quality assurance assessment. |
| <input type="checkbox"/> | 22. Utilize information technology to perform drug use evaluation by searching, sorting, organizing, and analyzing information to guide clinical decision making and to render quality pharmacist-provided care. |

IV. Promotion of Public Health

- | | |
|--------------------------|---|
| <input type="checkbox"/> | 23. Provide information and referrals regarding nutrition, life-style modification, and other non-medication therapies that are effective in promoting health or preventing or minimizing the progress of disease or medical condition. |
| <input type="checkbox"/> | 24. Enhance public awareness of disease prevention and health promotion by engaging in outreach programs to help patients, families, and communities. |
| <input type="checkbox"/> | 25. Anticipate, assess, and provide initial treatment and follow-up management for medical emergencies |
| <input type="checkbox"/> | 26. Perform basic cardiac life support including CPR. |
| <input type="checkbox"/> | 27. Administer vaccinations. |
| <input type="checkbox"/> | 28. Perform basic physical assessments including vital sign measurements (e.g. blood pressure). |

V. Provision of Drug Information and Education

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | 29. Provide health information regarding proper medication selection, administration, possible adverse side effects, , drug interactions, contraindications, and therapeutic outcomes to patients and health professionals. |
| <input type="checkbox"/> | 30. Identify, retrieve, interpret, and evaluate scientific literature from databases and various sources to develop an evidence-based treatment plan that is compatible with patient's needs, goals, culture, ethics, and legal requirements. |
| <input type="checkbox"/> | 31. Conduct in-service educational programs regarding pharmacy related topics. |

General Ability-Based Outcomes

I. Communication

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | 32. Communicate orally, and in writing, with peers, other professionals, patients, and care givers. |
| <input type="checkbox"/> | 33. Assume leadership positions in the community and professional organizations. |
| <input checked="" type="checkbox"/> | 34. Respond empathetically to patient concerns. |

35.

II. Ethical Decision Making

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | 36. Nurture personal and professional values, attitudes, and habits needed to provide patient centered care in a compassionate, ethical, and professional manner. |
|-------------------------------------|---|

37.

III. Social and Contextual Awareness

- | | |
|-------------------------------------|---|
| <input type="checkbox"/> | 38. Understand the influence of the physical and social environment on the provision of optimal pharmacotherapy for individuals, families, and communities at risk. |
| <input checked="" type="checkbox"/> | 39. Demonstrate sensitivity and tolerance within multicultural interactions and settings. |

IV. Social Responsibility

- | | |
|--------------------------|--|
| <input type="checkbox"/> | 40. Promote the overall psychological wellness of the community by upholding social justice and equality in your practice. |
|--------------------------|--|

V. Self-Learning Abilities

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | 41. Pursue life long learning and professional development through self analysis and development. |
|-------------------------------------|---|

VI. Professional Responsibility

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | 42. Carry out duties in accordance with legal, ethical, socio-cultural, economic and professional guidelines. |
|-------------------------------------|---|

**2004 CAPE Supplemental Educational Outcomes
Final 2007**

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ANATOMY, PHYSIOLOGY and PATHOPHYSIOLOGY

PHARMACEUTICAL CARE Provide pharmaceutical care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, economic, and professional issues, emerging technologies, and evolving biomedical, socio-behavioral, and clinical sciences that may impact therapeutic outcomes.

I. Utilize and integrate knowledge of physiology, pathophysiology and anatomy in order to formulate a therapeutic care plan.

- | | |
|--------------------------|--|
| <input type="checkbox"/> | A. Utilize knowledge of physiology and anatomy to recommend and defend the course of treatment that best addresses a patient's needs. |
| <input type="checkbox"/> | B. Discuss the pathophysiological factors contributing to a specific patient problem and disease state. |
| <input type="checkbox"/> | C. Interpret and evaluate patient data taking into consideration normal and disease states as well as the interaction and interrelationship among organ systems. |
| <input type="checkbox"/> | D. Apply knowledge of physiology, pathophysiology and anatomy to evaluate the effectiveness of a treatment regimen and manage medications in a manner that assures optimal therapeutic outcomes. |

II. Taking into consideration the differences in a patient's anatomy, physiology and pathophysiologic state, recommend changes in pharmacotherapeutic regimens that eliminate drug interactions, reduce side effects, increase compliance and improve therapeutic outcomes.

- | | |
|--------------------------|--|
| <input type="checkbox"/> | A. Based on individual patient characteristics and medical conditions, determine alternative pharmacotherapeutic options by evaluating patient specific variables with regard to pathophysiology and anatomical characteristics. |
| <input type="checkbox"/> | B. Modify drug therapy regimens based on the evaluation of a patient's anatomy, physiology and pathophysiologic state. |

III. Use appropriate scientific terminology to convey anatomical, physiologic and pathophysiologic concepts.

- | | |
|--------------------------|--|
| <input type="checkbox"/> | A. Effectively communicate the rationale based on the patient's pathophysiologic state for therapeutic decisions at an appropriate level of understanding for patients, caregivers, and other health care professionals. |
| <input type="checkbox"/> | B. Respond accurately and appropriately to questions related, either directly or indirectly, to patient pathophysiology posed by patients and other health care professionals. |

IV. Develop evidence-based disease prevention programs for patient populations

- | | |
|--------------------------|---|
| <input type="checkbox"/> | A. Considering patient pathophysiology from a population perspective, suggest appropriate use of pharmacologic agents in the prevention of disease or the modification of normal bodily function. |
| <input type="checkbox"/> | B. Recognize potential problems in disease prevention initiatives by utilizing the knowledge of principles of anatomy, physiology and pathophysiology. |

BIOLOGY (Biochemistry and Molecular and Cellular Biology)

PHARMACEUTICAL CARE Provide pharmaceutical care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, economic, and professional issues, emerging technologies, and evolving biomedical, sociobehavioral, and clinical sciences that may impact therapeutic outcomes.

1. Describe the structure, function and metabolic pathways for carbohydrates, amino acids and lipids.

- | | |
|--------------------------|--|
| <input type="checkbox"/> | a. Identify the biochemical class (lipid, carbohydrate, amino acid) to which a monomeric compound belongs. |
| <input type="checkbox"/> | b. Outline the general primary biochemical pathway by which such a compound is oxidized in the cell. |
| <input type="checkbox"/> | c. Predict pathological consequences of blockages or regulatory errors in these pathways. Note points where drug therapeutic intervention may be possible. |
| <input type="checkbox"/> | d. Describe how foods vary in nutritional value, relating this to the chemical composition of the foodstuff. |
| <input type="checkbox"/> | e. Relate energy generation, storage, and mobilization in the body to the function of adipose tissue, liver, and kidney. |
| <input type="checkbox"/> | f. Distinguish essential from nonessential nutrients, including lipids, amino acids, vitamins, and minerals, and explain why they are essential. |

2. Discuss the alterations in lipid and carbohydrate metabolism that occur as a result of diabetes.

- | | |
|--------------------------|--|
| <input type="checkbox"/> | a. Distinguish among the types of diabetes in terms of their underlying causes. |
| <input type="checkbox"/> | b. Relate differences in causes of different types of diabetes to upsets in metabolic pathways for lipids and carbohydrate, and connect these upsets to symptoms of the various types of diabetes. Note where drug therapeutic intervention may be possible. |

3. Discuss the metabolism of lipoproteins, medical problems associated with abnormal lipoprotein levels and therapeutic agents used to treat lipid disorders.

- | | |
|--------------------------|--|
| <input type="checkbox"/> | a. For lipids taken in the diet, outline the process of digestion and transport within the body, noting the role of lipoproteins, triglycerides, and cholesterol. |
| <input type="checkbox"/> | b. Outline the mechanisms of storage and mobilization of lipids for energy production in the body. |
| <input type="checkbox"/> | c. Predict pathological consequences of blockages or regulatory errors in these mechanisms and processes. Note points where drug therapeutic intervention may be possible. |

4. Describe the metabolism of arachidonic acid and discuss the therapeutic implications related to the mechanism of NSAIDs and asthma therapy.

- | | |
|--------------------------|---|
| <input type="checkbox"/> | a. Relate the structure of arachidonic acid to its biochemical role as a precursor of prostaglandins, thromboxanes, and leukotrienes. |
| <input type="checkbox"/> | b. Describe the reactions performed by cyclo-oxygenases and outline the connections to the inflammatory process and to asthma. |
| <input type="checkbox"/> | c. Employ knowledge of NSAID structural features to predict and rationalize their therapeutic effects and adverse effects. |
| <input type="checkbox"/> | d. Relate dietary intake of polyunsaturated fatty acids to cyclo-oxygenase action and production of mediators of inflammation. |

- e. Employ knowledge of leukotriene modifiers to predict and explain their action in treating asthma.

5. Describe how enzyme activity is regulated through second messengers and hormones.

- | | |
|--------------------------|--|
| <input type="checkbox"/> | a. List common second messengers and the biochemical pathways they play a role in. Note enzymes that produce or are regulated by these second messengers. |
| <input type="checkbox"/> | b. List common protein and peptide hormones and relate them to physiological systems such as the immune system, digestion, blood pressure regulation, and others. Do the same for common lipid-based hormones. Note enzymes that produce or are regulated by these hormones. |
| <input type="checkbox"/> | c. Note points in these pathways where drug therapeutic intervention may be possible. |

6. Describe the processes involved in replication, transcription and translation of genetic information.

- | | |
|--------------------------|--|
| <input type="checkbox"/> | a. Describe the enzymatic reactions involved in the processes of replication, transcription, and translation. |
| <input type="checkbox"/> | b. Relate the action of antibiotics to these processes, describing the basis for selective inhibition of microbial processes over mammalian processes. |
| <input type="checkbox"/> | c. Explain how changes in genes and their expression can lead to altered biochemical function, and contribute to pathologies such as cancer and inborn errors in metabolism. List biochemical mechanisms leading to such genetic changes. |
| <input type="checkbox"/> | d. Outline the processes by which nucleotides are synthesized biochemically, and relate these to pathologies such as gout, Lesch-Nyhan disease, and immunodeficiencies. Note points in these pathways where drug therapeutic intervention may be possible. |
| <input type="checkbox"/> | e. Outline forensic and diagnostic uses of DNA amplification and hybridization technology. Describe the biochemical reactions that form the basis for this technology. |

7. Describe the role of vitamin and minerals in metabolism and identify reactions utilized by these compounds.

- | | |
|--------------------------|---|
| <input type="checkbox"/> | a. List the vitamins and minerals needed for human health, and describe the amounts needed in the diet. |
| <input type="checkbox"/> | b. List dietary sources of the various vitamins and minerals, noting their relative richness as sources. |
| <input type="checkbox"/> | c. Identify the structure of vitamins and the related enzymatic cofactors, and note characteristic features. Relate the structure and chemical features to their function in enzymatic catalysis. |
| <input type="checkbox"/> | d. Note characteristic chemical properties of the required minerals, and relate these to their function in enzymatic catalysis. |

8. Describe the biochemistry of membranes.

- | | |
|--------------------------|--|
| <input type="checkbox"/> | a. List the general biological functions performed by membranes. |
| <input type="checkbox"/> | 1) List lipids commonly found in biological membranes. |
| <input type="checkbox"/> | 2) Describe the leaflet structure of lipid bilayers and relate this to the chemical features of lipids commonly found in biological membranes. |
| <input type="checkbox"/> | b. Relate the lipid composition of biological membranes to differences in physical properties of the membrane, and hence to differences in biological function. Note pathologies associated with membrane lipid biosynthesis and turnover. |
| <input type="checkbox"/> | c. Describe how proteins are associated with biological membranes, and relate the type of association |

	(peripheral, integral) to the biological functioning of the protein.
<input type="checkbox"/>	d. Describe the role of biological membranes in drug absorption, distribution, and action.

9. Describe DNA recombination and discuss the impact it has on production of proteins as drugs.

<input type="checkbox"/>	a. Describe the general process of expression cloning of proteins, and note differences in such protein production by bacteria, yeast, and animal cells.
<input type="checkbox"/>	b. List examples of proteins produced by recombinant DNA technology for therapeutic and diagnostic uses.
<input type="checkbox"/>	c. Compare such artificially-produced proteins to those derived from traditional natural sources, noting differences in purity, cost, effectiveness, and safety.

LIBRARIES and EDUCATIONAL RESOURCES

1. PHARMACEUTICAL CARE Provide pharmaceutical care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, economic, and professional issues, emerging technologies, and evolving biomedical, sociobehavioral, and clinical sciences that may impact therapeutic outcomes.

a. Provide patient-centered care.

<input type="checkbox"/>	i. Design, implement, monitor, evaluate, and adjust pharmaceutical care plans that are patient specific and evidence-based.
<input type="checkbox"/>	1. <i>Understand and use principles of evidence-based medicine to assess information needs, formulate focused queries, acquire the best available evidence, evaluate the evidence, and apply clinical expertise in using the evidence in providing patient-centered care.</i>
<input type="checkbox"/>	2. <i>Maintain awareness of evidence-based information resources. Identify and locate the best evidence on clinical questions, including systematic reviews, meta-analyses, practice guidelines, and randomized controlled trials.</i>
<input type="checkbox"/>	ii. Communicate and collaborate with prescribers, patients, care givers, and other involved health care providers to engender a team approach to patient care.
<input type="checkbox"/>	3. <i>Identify and regularly use information resources that enhance the pharmacist's understanding of patient viewpoints, beliefs, and attitudes.</i>
<input type="checkbox"/>	4. <i>Effectively communicate research findings at appropriate levels for patients and healthcare professionals.</i>
<input type="checkbox"/>	iii. Retrieve, analyze, and interpret the professional, lay, and scientific literature to provide drug information to patients, their families, and other involved health care providers.
<input type="checkbox"/>	5. <i>Understand and use principles of evidence-based medicine to assess information needs, formulate focused queries, acquire the best available evidence, evaluate the evidence, and apply clinical expertise in using the evidence in providing patient-centered care.</i>
<input type="checkbox"/>	6. <i>Maintain awareness of evidence-based information resources. Identify and locate the best evidence on clinical questions, including systematic reviews, meta-analyses, practice guidelines, and randomized controlled trials.</i>
<input type="checkbox"/>	7. <i>Identify and regularly use information resources that enhance the pharmacist's understanding of patient viewpoints, beliefs, and attitudes.</i>
<input type="checkbox"/>	8. <i>Effectively communicate research findings at appropriate levels for patients and healthcare professionals.</i>
<input type="checkbox"/>	9. <i>Identify, evaluate and regularly use a variety of information resources, including those intended for lay people and those written for healthcare professionals and including reference books, full text databases, websites, and primary literature.</i>
<input type="checkbox"/>	10. <i>Demonstrate proficiency in searching the biomedical literature using a variety of resources and interfaces, including MedLine, via PubMed or other interfaces: Build search strategies using Boolean operators, controlled vocabularies where available (e.g. National Library of Medicine Medical Subject Headings (MeSH)), database limiting capabilities and field searching. Refine and implement effective search strategies for different purposes.</i>
<input type="checkbox"/>	11. <i>Use available services of librarians and other information professionals to supplement information retrieval and to learn about new resources or enhancements to existing resources.</i>
<input type="checkbox"/>	12. <i>Determine accuracy of information by investigating authority of resources, effectiveness of search strategy, and potential biases or conflicts of interest in the information retrieved.</i>
<input type="checkbox"/>	13. <i>Determine applicability of the information to specific clinical questions and draw conclusions from new information to build on previous knowledge base.</i>

<input type="checkbox"/>	iv. Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.
<input type="checkbox"/>	14. <i>Understand issues of privacy, copyright, plagiarism and other issues involved in the legal and ethical uses of information.</i>
<input type="checkbox"/>	v. Maintain professional competence by identifying and analyzing emerging issues, products, and services that may impact patient-specific therapeutic outcomes.
<input type="checkbox"/>	15. <i>Use available services of librarians and other information professionals to supplement information retrieval and to learn about new resources or enhancements to existing resources.</i>

<input type="checkbox"/>	16. Practice life-long learning by maintaining records of information retrieval processes and by updating and refining information search and retrieval skills to maintain awareness of current issues, products and services.
<input type="checkbox"/>	17. Use current awareness tools such as journal and database alerting services.

b. Provide population-based care.

<input type="checkbox"/>	i. Develop and implement population-specific, evidence-based disease management programs and protocols based upon analysis of epidemiologic and pharmaco-economic data, medication use criteria, medication use review, and risk reduction strategies.
<input type="checkbox"/>	1. Understand and use principles of evidence-based medicine to assess information needs, formulate focused queries, acquire the best available evidence, evaluate the evidence, and apply clinical expertise in using the evidence in providing patient-centered care.
<input type="checkbox"/>	2. Maintain awareness of evidence-based information resources. Identify and locate the best evidence on clinical questions, including systematic reviews, meta-analyses, practice guidelines, and randomized controlled trials.
<input type="checkbox"/>	ii. Communicate and collaborate with prescribers, population members, care givers, and other involved health care providers to engender a team approach to patient care.
<input type="checkbox"/>	3. Identify and regularly use information resources that enhance the pharmacist's understanding of patient viewpoints, beliefs, and attitudes.
<input type="checkbox"/>	4. Effectively communicate research findings at appropriate levels for patients and healthcare professionals.
<input type="checkbox"/>	iii. Retrieve, analyze, and interpret the professional, lay, and scientific literature to provide drug information to other health care providers and to the public.
<input type="checkbox"/>	5. Understand and use principles of evidence-based medicine to assess information needs, formulate focused queries, acquire the best available evidence, evaluate the evidence, and apply clinical expertise in using the evidence in providing patient-centered care.
<input type="checkbox"/>	6. Maintain awareness of evidence-based information resources. Identify and locate the best evidence on clinical questions, including systematic reviews, meta-analyses, practice guidelines, and randomized controlled trials.
<input type="checkbox"/>	7. Identify and regularly use information resources that enhance the pharmacist's understanding of patient viewpoints, beliefs, and attitudes.
<input type="checkbox"/>	8. Effectively communicate research findings at appropriate levels for patients and healthcare professionals.
<input type="checkbox"/>	9. Identify, evaluate and regularly use a variety of information resources, including those intended for lay people and those written for healthcare professionals and including reference books, fulltext databases, websites, and primary literature.
<input type="checkbox"/>	10. Demonstrate proficiency in searching the biomedical literature using a variety of resources and interfaces, including MedLine, via PubMed or other interfaces: Build search strategies using Boolean operators, controlled vocabularies where available (e.g. National Library of Medicine Medical Subject Headings (MeSH)), database limiting capabilities and field searching. Refine and implement effective search strategies for different purposes.
<input type="checkbox"/>	11. Use available services of librarians and other information professionals to supplement information retrieval and to learn about new resources or enhancements to existing resources.
<input type="checkbox"/>	12. Determine accuracy of information by investigating authority of resources, effectiveness of search strategy, and potential biases or conflicts of interest in the information retrieved.
<input type="checkbox"/>	13. Determine applicability of the information to specific clinical questions and draw

	<i>conclusions from new information to build on previous knowledge base.</i>
<input type="checkbox"/>	iv. Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.
<input type="checkbox"/>	14. <i>Understand issues of privacy, copyright, plagiarism and other issues involved in the legal and ethical uses of information.</i>
<input type="checkbox"/>	v. Maintain professional competence by identifying and analyzing emerging issues, products, and services that may impact population-based, therapeutic outcomes.
<input type="checkbox"/>	15. <i>Use available services of librarians and other information professionals to supplement information retrieval and to learn about new resources or enhancements to existing resources.</i>

<input type="checkbox"/>	16. Practice life-long learning by maintaining records of information retrieval processes and by updating and refining information search and retrieval skills to maintain awareness of current issues, products and services.
<input type="checkbox"/>	17. Use current awareness tools such as journal and database alerting services.

2. SYSTEMS MANAGEMENT Manage and use resources of the health care system, in cooperation with patients, prescribers, other health care providers, and administrative and supportive personnel, to promote health; to provide, assess, and coordinate safe, accurate, and time-sensitive medication distribution; and to improve therapeutic outcomes of medication use.

a. Manage human, physical, medical, informational, and technological resources.

<input type="checkbox"/>	i. Apply relevant legal, ethical, social, economic, and professional principles/issues to assure efficient, cost-effective utilization of human, physical, medical, informational, and technological resources in the provision of patient care.
<input type="checkbox"/>	1. Understand issues of privacy, copyright, plagiarism and other issues involved in the legal and ethical uses of information.
<input type="checkbox"/>	ii. Communicate and collaborate with patients, prescribers, other health care providers, and administrative and supportive personnel to engender a team approach to assure efficient, cost-effective utilization of human, physical, medical, informational, and technological resources in the provision of patient care.
<input type="checkbox"/>	2. Effectively communicate research findings at appropriate levels for patients and healthcare professionals.
<input type="checkbox"/>	3. Identify, use, and share available resources for continuing education in the effective uses of current information resources and technologies.
<input type="checkbox"/>	iii. Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.
<input type="checkbox"/>	iv. Maintain professional competence by identifying and analyzing emerging issues, products, and services that may impact management of human, physical, medical, informational, and technological resources in the provision of patient care.
<input type="checkbox"/>	4. Use available services of librarians and other information professionals to supplement information retrieval and to learn about new resources or enhancements to existing resources.
<input type="checkbox"/>	5. Practice life-long learning by maintaining records of information retrieval processes and by updating and refining information search and retrieval skills to maintain awareness of current issues, products and services.
<input type="checkbox"/>	6. Use current awareness tools such as journal and database alerting services.
<input type="checkbox"/>	7. Identify, use, and share available resources for continuing education in the effective uses of current information resources and technologies.

b. Manage medication use systems.

<input type="checkbox"/>	i. Apply patient- and population-specific data, quality assurance strategies, and research processes to assure that medication use systems minimize drug misadventuring and optimize patient outcomes.
<input type="checkbox"/>	ii. Apply patient- and population-specific data, quality assurance strategies, and research processes to
<input type="checkbox"/>	8. Identify, evaluate and regularly use a variety of information resources, including those intended for lay people and those written for healthcare professionals and including reference books, fulltext databases, websites, and primary literature.

	develop drug use and health policy, and to design pharmacy benefits.
<input type="checkbox"/>	9. <i>Identify, evaluate and regularly use a variety of information resources, including those intended for lay people and those written for healthcare professionals and including reference books, fulltext databases, websites, and primary literature.</i>
<input type="checkbox"/>	iii. Communicate and collaborate with prescribers, patients, caregivers, other involved health care providers and administrative and supportive personnel to identify and resolve medication use problems.
<input type="checkbox"/>	iv. Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.
<input type="checkbox"/>	vi. Maintain professional competence by identifying and analyzing emerging issues, products, and services that may impact medication use systems, to develop use and health policy, and to design pharmacy benefits.
<input type="checkbox"/>	10. <i>Use available services of librarians and other information professionals to supplement information retrieval and to learn about new resources or enhancements to existing resources.</i>
<input type="checkbox"/>	11. <i>Practice life-long learning by maintaining records of information retrieval processes and by updating and refining information search and retrieval skills to maintain awareness of current issues, products and services.</i>
<input type="checkbox"/>	12. <i>Use current awareness tools such as journal and database alerting services.</i>

3. PUBLIC HEALTH Promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at-risk populations, and other members of an interprofessional team of health care providers.

a. Assure the availability of effective, quality health and disease prevention services.

<input type="checkbox"/>	i. Apply population-specific data, quality assurance strategies, and research processes to develop identify and resolve public health problems.
<input type="checkbox"/>	1. <i>Identify, evaluate and regularly use a variety of information resources, including those intended for lay people and those written for healthcare professionals and including reference books, fulltext databases, websites, and primary literature.</i>
<input type="checkbox"/>	ii. Communicate and collaborate with prescribers, policy makers, members of the community and other involved health care providers and administrative and supportive personnel to identify and resolve public health problems.
<input type="checkbox"/>	iii. Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.
<input type="checkbox"/>	iv. Maintain professional competence by identifying and analyzing emerging issues, products, and services that may affect the efficacy or quality of disease prevention services to amend existing or develop additional services.
<input type="checkbox"/>	2. <i>Use available services of librarians and other information professionals to supplement information retrieval and to learn about new resources or enhancements to existing resources.</i>
<input type="checkbox"/>	3. <i>Practice life-long learning by maintaining records of information retrieval processes and by updating and refining information search and retrieval skills to maintain awareness of current issues, products and services.</i>
<input type="checkbox"/>	4. <i>Use current awareness tools such as journal and database alerting services.</i>

b. Develop public health policy.

<input type="checkbox"/>	i. Apply population-specific data, quality assurance strategies, and research processes to develop public health policy.
	5. <i>Identify, evaluate and regularly use a variety of information resources, including those</i>

<input type="checkbox"/>	<i>intended for lay people and those written for healthcare professionals and including reference books, fulltext databases, websites, and primary literature.</i>
<input type="checkbox"/>	ii. Communicate and collaborate with prescribers, policy makers, members of the community and other involved health care providers and administrative and supportive personnel to develop public policy.
<input type="checkbox"/>	iii. Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.
<input type="checkbox"/>	v. Maintain professional competence by identifying and analyzing emerging issues, products, and services that may affect public health policy, to amend existing or develop additional policies.
<input type="checkbox"/>	6. <i>Use available services of librarians and other information professionals to supplement information retrieval and to learn about new resources or enhancements to existing resources</i>
<input type="checkbox"/>	7. <i>Practice life-long learning by maintaining records of information retrieval processes and by updating and refining information search and retrieval skills to maintain awareness of current issues, products and services.</i>
<input type="checkbox"/>	8. <i>Use current awareness tools such as journal and database alerting services.</i>

MEDICINAL CHEMISTRY

PHARMACEUTICAL CARE Provide pharmaceutical care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, economic, and professional issues, emerging technologies, and evolving biomedical, sociobehavioral, and clinical sciences that may impact therapeutic outcomes.

I. Acquire, comprehend, apply, analyze, synthesize, and evaluate information about the chemical structure of drugs and drug classes in order to design, implement, monitor, evaluate, and adjust pharmaceutical care plans that are patient-specific and evidence based.

- | | |
|--------------------------|---|
| <input type="checkbox"/> | A. Identify the chemical and/or pharmacological classification to which a drug belongs. |
| <input type="checkbox"/> | B. Predict therapeutic applications for individual drugs based on knowledge of chemical and/or pharmacologic classification. Given patient-specific information, select optimal drug within a pharmacologic class based on structure-activity relationships (SAR) and those structural features responsible for binding to biological targets that account for relative drug potencies and receptor affinities. |
| <input type="checkbox"/> | C. Select optimal drug therapy within a chemical and/or pharmacologic class based on structural features that affect absorption, distribution, metabolism and excretion. |
| <input type="checkbox"/> | D. Determine the appropriate route(s) of drug administration based on the contribution of specific chemical features to drug solubility in biological fluids and delivery vehicles. |
| <input type="checkbox"/> | E. Predict and prevent drug-drug interactions, drug-food interactions, drug-herbal interactions, and drug side effects and toxicities by applying knowledge of structural features and other chemical principles. |
| <input type="checkbox"/> | F. Select appropriate drug therapy based on mechanism of drug action via integration of knowledge gained from the drug structure with concepts of organic chemistry, anatomy, physiology, pharmaceutics and pharmacology. |

II. Recommend changes in pharmacotherapeutic regimens based on chemical differences among drugs that relate to solving patient problems, providing patient-centered care, and providing population-based care.

- | | |
|--------------------------|--|
| <input type="checkbox"/> | A. Based on individual patient characteristics and medical conditions, evaluate pharmacotherapeutic options by analyzing chemical features that determine solubility, routes of metabolism, duration of action, and acid-base characteristics. |
| <input type="checkbox"/> | B. Modify drug therapy regimens based on the evaluation of structural features and chemical properties of drugs that are related to adverse drug reactions, drug-drug interactions, nutritional effects, and lack of efficacy. |

III. Resolve drug therapy problems of individual patients by applying knowledge of drug chemistry across pharmacological classes.

- | | |
|--------------------------|---|
| <input type="checkbox"/> | A. Prevent drug-drug interactions by consideration of the pharmacodynamics and pharmacokinetic differences of drugs. |
| <input type="checkbox"/> | B. Utilizing chemical principles, predict the potential adverse effects that contribute to patient morbidity and nonadherence. |
| <input type="checkbox"/> | C. Anticipate and prevent problems with drug delivery systems and routes of administration associated with the chemical properties of drugs. |
| <input type="checkbox"/> | D. Select an appropriate multi-source drug product based on knowledge of the chemical, administration associated with the chemical properties of drugs. |

IV. Use appropriate chemical terminology to explain chemical, pharmacological and basic therapeutic concepts.

- | | |
|--------------------------|---|
| <input type="checkbox"/> | A. Effectively communicate the chemical rationale for therapeutic decisions at an appropriate level of understanding for patients, caregivers, and other health |
|--------------------------|---|

	professionals.
<input type="checkbox"/>	B. Respond accurately and appropriately to questions related, either directly or indirectly, to drug structure or chemistry that are posed by patients and other health care professionals.

V. Maintain professional competence by employing knowledge of structural features to predict mechanisms, adverse effects, metabolism, solubility, acid/base characteristics, potential drug interactions, and therapeutic effects of future drug products.

PHARMACEUTICS

PHARMACEUTICAL CARE Provide pharmaceutical care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, economic, and professional issues, emerging technologies, and evolving biomedical, sociobehavioral, and clinical sciences that may impact therapeutic outcomes.

1. Identify and explain the physicochemical and formulation properties of a drug that influence its absorption and stability.

- a. Identify and describe the factors that influence the aqueous solubility and partition coefficient of a drug. Explain the importance of appropriate aqueous solubility and partition coefficient in the formulation design and absorption of drugs.
- b. Understand and explain the ionization of weak acidic and weak basic drugs and calculate the fraction of a drug in its ionized and un-ionized forms as a function of pH. Describe how pKa and pH influence the observed solubility and partitioning of a drug.
- c. Identify, evaluate, and explain the factors that affect the chemical stability of a drug under various environmental and packaging conditions.
- d. Identify and explain the factors that control the physical and microbiological stability of a drug product under various environmental and packaging conditions.
- e. Identify and explain the unique pharmaceutical challenges posed by contemporary biotechnology based drug products (biopharmaceuticals).

2. Identify and explain the properties of a drug that influence dosage form design and its route of administration.

- a. Describe the various routes of administration available for drug delivery, and discuss the advantages and disadvantage of each delivery system.
- b. Describe the characteristics of an ideal drug delivery system. Identify the various types of liquid, solid and semisolid dosage forms available.
- c. Discuss how physicochemical properties of a drug influence the design of various dosage forms, including biotech drugs.
- d. Explain the various formulation approaches taken to improve the in-vitro dissolution, solubility, stability and absorption of drugs from different dosage forms.
- e. Identify physical-chemical and formulation properties that make a drug suitable for modified release/controlled release, and explain the various formulation approaches available for modifying drug release from dosage forms.
- f. Discuss the methods/techniques used for establishing the performance and quality of dosage forms.

3. Identify and explain the dosage form features that influence therapeutic outcomes.

- a. Describe the role and functions of inactive/inert ingredients in different types of dosage forms.
- b. Describe the various methods of compounding and/or manufacture of different types of dosage forms.
- c. Explain the importance of packaging and storage conditions in expiration dates and drug product quality and assurance.
- d. Select an appropriate packaging container based on the physicochemical properties of the drug which meets a patient's need.
- e. Explain principles underlying the proper use of dosage forms, and their influence on bioavailability and therapeutic outcome.
- f. Determine the importance of selection of appropriate dosage form in drug therapy.

- g. Explain the influence of formulation, physiological, and anatomical factors on drug absorption from dosage forms.
- h. Discuss how compliance and adherence can be improved by appropriate dosage form selection.
- i. Select and recommend the best route of administration and dosage form for a patient.
- j. Identify and prevent drug interactions and incompatibilities based on presence of active and inactive pharmaceutical ingredients.
- k. Identify, solve, and prevent drug therapy problems related to dosage form, delivery system, and route of administration.

4. Make appropriate selection decisions for multisource drug products.

- a. Explain and understand the concepts of pharmaceutical equivalence, bioequivalence and therapeutic equivalence. Understand the basis for therapeutic equivalence or nonequivalence.
- b. Use the Orange Book appropriately to select and recommend a drug.
- c. Select and recommend appropriate drug product according to scientific, legal and economic guidelines where appropriate.

5. Compound safe and effective extemporaneous pharmaceutical products.

- a. Apply relevant standards of practice (including ethical guidelines) to prepare safe and effective dosage forms and perform in-process quality control.
- b. Search and apply most accurate and standardized information on extemporaneous compounding.
- c. Evaluate the suitability of an extemporaneously compounded dosage form for the administration of a drug for a patient.
- d. Identify physical and chemical incompatibilities among active and inactive pharmaceutical ingredients of a formulation; recommend and follow approaches to avoid incompatibilities and unwanted interactions.
- e. Calculate and measure the correct quantity of active and inactive pharmaceutical ingredients.
- f. Use correct laboratory measuring procedures to obtain the desired quantity of all formulation ingredients.
- g. Use good extemporaneous compounding practices in the preparation of a patientspecific drug product.
- h. Design and maintain an adequate operational facility for compounding pharmaceutical products.

6. Preparing safe and effective sterile dosage forms and enteral nutrition products.

- a. Apply relevant standards of practice (including ethical guidelines) to prepare safe and effective sterile dosage forms and perform in-process quality control.
- b. Calculate and measure the correct quantity of ingredients for preparing a sterile product.
- c. Use proper aseptic techniques to prepare sterile products.
- d. Identify physical and chemical incompatibilities among active and inactive components of sterile formulations; recommend and follow approaches to avoid unwanted interactions and incompatibilities.
- e. Use sterilization methods that are appropriate for the drug and product.
- f. Calculate the rate of drug administration based on the prescription order and the type of infusion pump used.
- g. Determine a patient's fluid, electrolyte and nutritional needs and calculate the composition of parenteral or enteral nutrition sources to meet their needs.
- h. Apply appropriate quality control procedures for sterile products.
- i. Evaluate the impact of physical and chemical stability on a sterile product.
- j. Design and maintain an adequate operational facility for compounding sterile pharmaceutical products.

7. Maintain professional competence by identifying and analyzing emerging issues in pharmaceutical dosage forms and compounding.

PHARMACOKINETICS

PHARMACEUTICAL CARE Provide pharmaceutical care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, economic, and professional issues, emerging technologies, and evolving biomedical, sociobehavioral, and clinical sciences that may impact therapeutic outcomes.

- 1. Evaluate the basic pharmacokinetics and pharmacodynamic properties of a drug and relate that to the manner in which the drug is used therapeutically.
- 2. Identify and explain the physical/chemical characteristics of a drug the influences its absorption, distribution and elimination.
- 3. Evaluate the primary and secondary drug information literature with regard to the pharmacokinetics and pharmacodynamics of drugs.
- 4. Estimate individual patient's kinetic parameters for any given drug from limited number of biological samples or from population kinetic data and patient characteristics.
- 5. Design dosage regimens based on the patient-specific or population (average) kinetic data.
- 6. Predict the effects of route and/or method of drug administration on the plasma concentration time profiles using the individual or population (average) kinetic data and judge the appropriateness of dosage form and route of administration.
- 7. Predict the effects of changes in the pharmacokinetic parameters (due to drug interactions, disease states, or special populations) on the plasma concentration-time profile of drugs and modify, if necessary, the dosage regimen based on the altered kinetic parameters.
- 8. Explain the influence of transporters on the pharmacokinetics/pharmacodynamics of a drug and how to determine their influence in failure of drug therapy would be assessed.
- 9. Explain how the role of pharmacogenomics in pharmacokinetics/pharmacodynamics of drugs would be utilized with regard to individualizing dosage regimens and possibly predicting adverse drug reactions.

PHARMACOLOGY

PHARMACEUTICAL CARE Provide pharmaceutical care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, economic, and professional issues, emerging technologies, and evolving biomedical, sociobehavioral, and clinical sciences that may impact therapeutic outcomes.

I. Acquire, comprehend, synthesize, apply and evaluate information about the pharmacology of therapeutic agents in order to design, implement, monitor, evaluate, and adjust pharmaceutical care plans that are patient-specific and evidence based.

- A. Recognize the pharmacological classification to which a therapeutic agent belongs.
- B. Determine therapeutic applications for an individual therapeutic agent based on its pharmacological classification. Recognize how drugs within a pharmacological class differ from one another with regard to mechanism of action, pharmacokinetic parameters and side effects.
- C. Given patient-specific information, select optimal therapeutic agents based on their binding sites and molecular mechanisms of action which account for relative drug potencies, efficacies and therapeutic outcomes.
- D. Select optimal drug therapy within a pharmacologic class based on knowledge related to absorption, distribution, metabolism and excretion.
- E. Address and prevent side effects and toxicities from therapeutic agents and xenobiotics by applying knowledge of mechanisms of toxicity
- F. Address and prevent drug-drug interactions, drug-food interactions, and drugnutraceutical interactions by applying knowledge of pharmacodynamic and pharmacokinetic principles.

II. Based on differences in pharmacological properties among drugs, recommend changes in pharmacotherapeutic regimens that eliminate drug interactions, reduce side effects, increase compliance and improve therapeutic outcomes.

- A. Based on individual patient characteristics and medical conditions, determine alternative pharmacotherapeutic options by evaluating site and mechanism of action, pharmacokinetics, adverse effects and drug interactions
- B. Modify drug therapy regimens based on the evaluation of pharmacological properties of drugs that are related to adverse drug reactions, drug-drug interactions, nutritional effects, and lack of efficacy.
- C. Apply the knowledge of pharmacology to review medication usage to optimize therapeutic outcomes.
- D. Apply knowledge of drug mechanism of action to reduce the incidence of duplicate therapy and polypharmacy in patients

III. Use appropriate scientific terminology to convey pharmacological and basic therapeutic concepts.

- A. Effectively communicate the pharmacological rationale for therapeutic decisions at an appropriate level of understanding for patients, caregivers, and other health care professionals.
- B. Respond accurately and appropriately to questions related, either directly or indirectly, to biological activity of therapeutic agents, posed by patients and other health care professionals.

IV. Develop evidence-based disease prevention programs for patient populations

- A. Suggest appropriate use of pharmacologic agents in the prevention of disease or the modification of normal bodily function.
- B. Recognize potential problems in disease prevention initiatives by utilizing the knowledge of pharmacological principles.

PHARMACY PRACTICE

PHARMACEUTICAL CARE Provide pharmaceutical care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, economic, and professional issues, emerging technologies, and evolving biomedical, sociobehavioral, and clinical sciences that may impact therapeutic outcomes.

I. Formulate a patient-centered pharmaceutical care plan (new or revised) in collaboration with other health care professionals, patients, and/or their caregivers.

- ☒ A. Gather and organize accurate and comprehensive patient information to identify ongoing or potential drug therapy problems.
 - 1. Obtain necessary information from the patient, caregiver, and/or other members of the health care team.
 - 2. Identify relevant information in the patient profile or medical record.
 - 3. Interview the patient or caregiver employing effective communication strategies.
 - 4. Identify the patient's primary complaint(s) and reason(s) for seeking medical care
 - 5. Perform selected aspects of physical assessment, as appropriate.
 - 6. Protect the confidentiality of patient information.
- ☐ B. Interpret and evaluate patient and drug-related data needed to identify actual or potential drug therapy problems (prescription and non-prescription).
 - 1. Evaluate information obtained from the patient's history and physical assessment.
 - 2. Assess any patient history of allergies and intolerances.
 - 3. Evaluate laboratory test results and pharmacokinetic data.
 - 4. Perform any additional patient calculations needed (e.g. creatinine clearance, ideal body weight, body surface area, body mass index)
 - 5. Identify the cause and significance of adverse drug effects.
 - 6. Evaluate the significance of actual or potential drug interactions.
 - 7. Assure that there is not excessive medication use or unnecessary drug duplication.
 - 8. Determine the extent to which medical conditions or diseases are treated or controlled.
 - 9. Assess patient adherence to previously prescribed medication regimens.
 - 10. Identify signs or potential indicators of drug misuse or abuse.
- ☐ C. Develop a complete medical and drug therapy problem list.
 - 1. Use relative priority to direct the pharmacotherapeutic plan.
 - 2. Differentiate active from inactive problems.
 - 3. Rank patient problems based on urgency and severity.
 - 4. Identify any preventative and health maintenance issues.
- ☐ D. Retrieve, analyze, and interpret the professional, lay, and scientific literature to make informed, rational, and evidence-based decisions.
 - 1. Construct well-built questions based on the patient's drug therapy problem(s) or needed information.
 - 2. Identify the types and quality of information that are available in primary, secondary, and tertiary information sources, including web-based resources and those intended for lay audiences.
 - 3. Employ effective and efficient search strategies to find appropriate sources of drug and health information using a variety of information resources.
 - 4. Effectively and efficiently search secondary sources such as MedLine to locate pertinent primary literature.
 - 5. Critically analyze all relevant literature, considering its applicability and validity to the information needed.
 - 6. Critically analyze primary literature with regard to study design, methodology, findings, and conclusions.
 - 7. Integrate evidence from the literature with clinical expertise and consideration of patient preferences to draw a conclusion.
 - 8. Provide drug information clearly, accurately, concisely, and in a timely manner in a language appropriate for the target audience.

9. Properly cite reference sources utilized.

- E. Select and recommend appropriate drug (prescription and non-prescription) and non-drug therapy as part of the care plan.
 - 1. Identify pharmacotherapeutic goals and endpoints of therapy.
 - 2. Apply principles of biochemistry, medicinal chemistry, pharmacology, and pathophysiology to select the appropriate drug(s).
 - 3. Consider social, economic, and cultural factors that influence a patient's perspective on health, illness, and medication use.
 - 4. Apply pharmacokinetic and pharmacodynamic principles to select the appropriate dose, dosage schedule, and drug delivery system.
 - 5. Determine the appropriate therapy duration.
 - 6. Apply pharmacoeconomic principles in drug selection.
 - 7. Identify and minimize or avoid drug interactions, adverse effects, and contraindications associated with the recommended drug therapy.
 - 8. Assure that there is not excessive medication use or unnecessary drug duplication.
 - 9. Recommend complementary therapies as appropriate to enhance therapeutic outcomes.
 - 10. Apply principles of nutrition to improve health, augment drug therapy, and reduce disease risk.
 - 11. Recommend medical goods and devices that are appropriate based on the patient's needs.
- F. Devise and implement a patient monitoring plan to ensure achievement of desired therapeutic outcomes.
 - 1. Monitor patient-specific subjective and objective parameters for drug efficacy and toxicity.
 - 2. Assess appropriate parameters in a timely manner and at appropriate intervals/frequencies.
 - 3. Determine whether patient-specific goals have been met and adjust the care plan accordingly.
 - 4. Anticipate, monitor for, and report adverse effects and drug interactions.
 - 5. Refer patients to other health care professionals when indicated.

II. Prepare and dispense medication(s) prescribed (or recommended) as part of the patient's care plan.

- A. Review and interpret prescription orders for patients.
 - 1. Evaluate the acceptability of prescription order transmission and legitimacy of source.
 - 2. Determine the validity of the patient-prescriber relationship.
 - 3. Clarify, add, and/or correct prescription order information when necessary.
- B. Accurately prepare and dispense medications and/or supervise the preparation of medications.
 - 1. Correctly count, measure, mix, reconstitute, and calculate the quantity of medications to dispense.
 - 2. Correctly prepare the label for the finished prescription.
 - 3. Select an appropriate container based on the chemical and physical properties of the drug that meets the patient's characteristics or needs.
- C. Accurately compound individual or bulk medications.
 - 1. Locate accurate information on extemporaneous formulations.
 - 2. Evaluate the suitability of an extemporaneously compounded formulation.
 - 3. Calculate the correct quantity of ingredients.
 - 4. Use correct gravimetric and volumetric measuring procedures to obtain the desired quantity of the formulation component.
 - 5. Use good compounding practices in the extemporaneous production of a patient-specific drug delivery system.
 - 6. Identify physical and chemical incompatibilities among components of a given formulation and recommend appropriate alternatives to avoid incompatibilities.
- D. Prepare, store, and assure quality of sterile dosage forms.
 - 1. Calculate the correct quantity of components when preparing a sterile product.
 - 2. Use proper aseptic techniques to prepare sterile dosage forms.
 - 3. Use sterilization methods that are appropriate for the pharmaceutical product.
 - 4. Calculate the rate of drug administration based on the prescription order and the type of infusion pump used.
 - 5. Determine a patient's fluid, electrolyte and nutritional needs and calculate the amount and composition of parenteral nutrition sources to meet those needs.

- 6. Perform proper quality control procedures.
- 7. Evaluate the stability and compatibility of sterile formulations.
- E. Comply with federal, state, and local statutes and regulations that affect pharmacy practice.
- F. Resolve ethical and moral decisions faced by pharmacists.

III. Develop population-specific, evidence-based disease management programs.

- A. Assess the health needs of a specific patient population by analyzing epidemiologic data and identifying risk factors that would adversely affect patient health.
- B. Develop appropriate criteria and outcome indicators and conduct medication reviews in specific populations.
- C. Evaluate pharmacoeconomic data relevant to appropriate disease-specific treatment plans.
- D. Design evidence-based disease management programs that incorporate outcome indicators, drug treatment protocols, risk reduction strategies, and education programs for health care providers and patients.
- E. Assure that all relevant members of a patient population receive needed services.

IV. Communicate and collaborate with prescribers, patients, caregivers, and other involved health care providers to engender a team approach to patient care.

- A. Communicate clearly, accurately, compassionately, confidently, and persuasively with patients, caregivers, other health care professionals, and the public using appropriate listening, verbal, nonverbal, and written communication skills.
- B. Exhibit a caring and respectful attitude and demonstrate empathy while establishing rapport and communicating with the patient and/or caregiver.
- C. Establish collaborative relationships with other healthcare professionals that foster a team approach to patient care.
- D. Demonstrate professionalism and leadership within professional and civic organizations.
- E. Effectively communicate drug and health information at appropriate levels for patients and healthcare professionals.
- F. Demonstrate sensitivity and tolerance within multicultural interactions and settings.
- G. Educate patients and/or caregivers about drug therapy.
 - 1. Explain to patients or caregivers the drug, dosage, indication, and storage requirements for a given drug.
 - 2. Educate patients or caregivers on the symptomatology, significance, frequency, and management of adverse drug reactions.
 - 3. Explain any action that should be taken in the event of a missed dose.
 - 4. Demonstrate proper administration technique for a given drug delivery system and, as appropriate, confirm the patient's ability to perform such techniques.
 - 5. Facilitate patients assuming an active role in their self-care and overall health.
 - 6. Choose communication methods that are sensitive to the social and cultural background of the target audience.
 - 7. Confirm patient understanding of counseling provided and clarify if needed.
- H. Educate patients or caregivers about the proper use of medical goods and devices.
 - 1. Identify print, audiovisual, and/or computerized sources of patient education information on medical devices and goods that meet the patient's needs.
 - 2. Demonstrate and verify the proper use of medical goods and devices to ensure effective use.
 - 3. Communicate storage, calibration, and maintenance information for medical goods and devices.
- I. Document pharmaceutical care activity in a patient profile or medical record to facilitate communication and collaboration among healthcare providers.

V. Maintain professional competency in providing pharmaceutical care by committing oneself to being an independent, self-initiated life-long learner.

- A. Identify and analyze emerging issues, products, and services that may impact patient-specific and population-based pharmaceutical care.
- B. Assess one's own knowledge and abilities independently.
- C. Set personal knowledge and ability goals and take responsibility for attaining them.

- D. Recognize self-limitations and seek appropriate assistance/clarification.
- E. Review topics relevant to patient care activities to enhance knowledge base and preparedness.
- F. Accept feedback and implement suggestions for improvement.
- G. Manage time appropriately and efficiently.
- H. Exhibit intellectual curiosity and personal commitment to ensure ongoing professional competency.

SOCIAL and ADMINISTRATIVE SCIENCES

1. PHARMACEUTICAL CARE Provide pharmaceutical care in cooperation with patients, prescribers, and other members of an interprofessional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, economic, and professional issues, emerging technologies, and evolving biomedical, sociobehavioral, and clinical sciences that may impact therapeutic outcomes.

1. Apply the following social/behavioral principles and theories in the design, delivery and evaluation of pharmaceutical care.

- A. Differentiate between psychosocial and drug therapy approaches to providing pharmaceutical care and employ both approaches in practice.
- B. Identify and describe relationships between patient and practitioner knowledge, attitudes, beliefs, and behaviors, and use information to design pharmaceutical care plans.
- C. Describe relevant behavioral theories of health, illness and medication use, and apply these theories to the pharmacotherapy plan.
- D. Identify and describe social and behavioral factors associated with medication nonadherence, and identify strategies to improve adherence.
- E. Apply social and behavioral research to understand and improve pharmaceutical care.
- F. Apply concepts of behavioral change to facilitate improved patient outcomes in health promotion, disease prevention and medication management.
- G. Demonstrate sensitivity to the various multicultural factors involved in pharmaceutical care.
- H. Display professional attitudes, beliefs and behaviors in the delivery of pharmaceutical care.
- I. Use ethical principles and theories to consider alternative sides of a pharmaceutical care and/or health care dilemma.

2. Communicate with prescribers, patients, caregivers, and other involved health care providers to engender a team approach to patient care.

- A. Develop verbal, non-verbal, written, and graphic communication skills to communicate effectively with patients, physicians, and others.
- B. Apply effective communication skills in interprofessional relationships to improve the clinical, economic, and humanistic outcomes of patients.
- C. Demonstrate provision of culturally and linguistically appropriate pharmaceutical care services to diverse patient populations.
- D. Use communication skills in educating and counseling patients, e.g.,
 - i. Setting the stage
 - ii. Establishing rapport
 - iii. Eliciting information from the patient (Question asking)
 - iv. Providing information to the patient (Patient Education)
 - v. Organizing the encounter
 - vi. Promoting adherence to appropriate therapy
 - vii. Encouraging patient involvement
 - viii. Demonstrating sensitivity to and adjustment of communication based on contextual or cultural factors, including health literacy, literacy, cognitive impairment, etc.
 - ix. Exhibiting professional demeanor
 - x. Exhibiting professional decision-making
 - xi. Concluding the encounter

2. SYSTEMS MANAGEMENT Manage and use resources of the health care system, in cooperation with patients, prescribers, other health care providers, and administrative and supportive personnel, to promote health; to provide, assess, and coordinate safe, accurate, and time-sensitive medication distribution; and to improve therapeutic outcomes of medication use.

1. Describe and demonstrate appropriate utilization of management principles and use of health care resources in the American health care system.

- A. Identify the key features of private and public payers of health care.
 - i. Differentiate modes and mechanisms of paying for health and pharmaceutical care
 - ii. Describe benefits provided under Medicare.
 - iii. Describe the roles of state and federal governments in financing and administering Medicaid.
- B. Describe the objectives of health insurance and managed health care programs.
 - i. Differentiate between insuring health and managing health care.
 - ii. Describe the evolution of pharmacists' roles in the health care system.
 - iii. Understand the impact of health care costs on the medication distribution and use systems.
 - iv. Define the role of the pharmacist in providing medication therapy management.
 - v. Demonstrate the role of pharmacists in providing access to pharmaceutical care to all patients.
 - vi. Demonstrate an awareness of health disparities and means of addressing the problem.

2. Manage pharmacy operations.

- i. Evaluate a pharmacy for ownership or management using principles of financial management and business indicators.
- ii. Conduct a basic analysis to diagnose and resolve financial and management problems.
- iii. Establish a mission statement with component goals and actions.
- iv. Develop a strategic plan to achieve the identified goals.
 - v. Apply the principles of business planning to develop a business plan that supports the implementation and provision of pharmaceutical care services, identifies and acquires necessary resources, and assures financial success of the practice, i.e.,
 - a. Address the financial, legal, accounting, and managerial role of the management/technical team.
 - b. Determine the cost to dispense a prescription and the appropriateness of pricing strategies.
 - c. Determine a budget for financial resource allocation.
 - d. Predict patient care needs and professional service opportunities.
 - e. Establish effective time management and priority-setting procedures.
 - f. Determine strategies for managing organizational change.
 - g. Evaluate the achievements of a practice in relation to the established mission, fiscal resources, and customer needs.
 - vi. Apply marketing principles to effectively market a pharmacy or pharmaceutical care service.
 - a. Assess demand (among patients, providers, and payers) and competition, and identify a viable market within a target location.
 - b. Develop strategies to address marketing needs (products/services, price, promotion, place, personnel).
 - c. Document services and outcomes to enhance marketing and reimbursement.
 - d. Develop direct-selling skills for approaching patients, providers, and payers to engage in medication therapy management or pharmaceutical care services.
 - vii. Identify the impact of the government and third party payers on pharmacy operations and understand the basic principles/strategies for negotiating contracts with payers.
 - viii. Develop strategies for reimbursement of pharmacy services, such as medication therapy management.

3. Manage personnel.

- A. Determine the organizational structure of a pharmacy.
- B. Identify the components of a job description.
- C. Identify a staff of persons (professional, technical and supportive) capable of fulfilling the practice mission.
- D. Interpret state and federal regulations that affect personnel policies.
- E. Understand the role of staffing plans in maintaining workforce productivity.
- F. Determine the process used to recruit, retain, and reward an individual.

4. Optimize physical and technological resources required to fulfill the practice mission.

- A. Evaluate a pharmacy's layout.
- B. Design/redesign a pharmacy to maintain efficiency and enhances patient-focused care services.
- C. Utilize automated medication storage and distribute systems, which improve the practice mission.
 - i. Determine the benefits of medication storage and distribution systems, medicationpacking systems, and bar-code labeling systems.
 - ii. Identify electronic information systems that assists in the transfer of patient information needed for medication management.
 - iii. Identify the role of pharmacists when computerized prescriber order-entry systems are utilized.

5. Manage medication distribution and control systems.

- A. Utilize inventory control concepts to develop and implement an inventory control system.
 - i. Determine and maintain optimal inventory mix/level.
 - ii. Select drug products based on bioequivalence and therapeutic equivalence.
 - iii. Assess and evaluate the utility of automated medication storage and distribution devices.
 - v. Maintain records of products received and removed from inventory.
 - v. Perform drug control, storage and security functions.
- B. Design, select, implement, and/or manage drug distribution systems for various practice settings.
 - i. Recognize distinguishing characteristics of drug distribution systems in a variety of settings, including automated systems.
 - ii. Develop appropriate job descriptions for a given drug distribution system.
 - iii. Develop and utilize policies and procedures that provide quality assurance/control for improving the efficiency and effectiveness of a given drug distribution system.

6. Manage medication use systems.

- A. Participate in the pharmaceutical care system's process for reporting and managing medication errors and adverse drug reactions.
 - i. Identify and report medication errors and adverse drug reactions to appropriate individuals and organizations (including institutional and federal).
 - ii. Evaluate information obtained from adverse drug reaction and medication error reporting systems to identify preventable causes.
 - iii. Recommend and implement actions to minimize the occurrence of adverse drug reactions and medication errors.
- B. Participate as part of a multidisciplinary team in the pharmaceutical care system's process for conducting medication use evaluations.
 - i. Develop appropriate criteria and outcome indicators.
 - a. Identify appropriate drugs for review.
 - b. Identify appropriate criteria or indicators developed by national organizations and regulatory agencies.
 - c. Adapt and/or modify existing criteria for use in a given situation.
 - d. Develop criteria and/or indicators based on analysis of the literature, and site specific considerations.
 - ii. Conduct medication use evaluations.

- a. Collect data for a medication utilization review.
- b. Apply criteria to collected drug utilization review data.
- c. Implement corrective actions to improve drug use, if necessary.
- d. Assess outcomes of these corrective actions through a multidisciplinary system.

- C. Participate in the development and implementation of a formulary system.
 - a. Develop standards for drug product inclusion in the formulary.
 - (a) Compile and evaluate relevant scientific literature and drug use data across patients and prescribers within the system.
 - (b) Develop therapeutic interchange guidelines.
 - b. Implement and manage the formulary system.
 - (a) Compile and evaluate data necessary to review therapeutic and/or generic classes of drugs and new products for formulary considerations.
 - (b) Monitor prescribers and pharmacists compliance with formulary standards.
 - (c) Implement corrective action if variances from the formulary standards occur.
 - (d) Communicate with managers and caregivers regarding formulary decisions.
 - (e) Re-evaluate formulary decisions and their impact on patient care on a continual basis.
- D. Apply principles of outcomes research and quality assessment methods to the evaluation of pharmaceutical care.
 - i. Use appropriate structure, process, and outcome measures to evaluate the quality of pharmaceutical care.
 - ii. Apply elements of continuous quality improvement to pharmaceutical care.
 - iii. Apply appropriate drug use management methods to evaluate the quality of pharmaceutical care.
 - iv. Use appropriate critical pathways, clinical practice guidelines, and disease management protocols in the delivery of pharmaceutical care.
 - v. Document quality assurance activities according to the specifications of relevant accrediting and regulatory bodies.
 - vi. Explain and demonstrate use of report cards in assessing the quality of health care.
 - vii. Apply principles of pharmacoconomics in making pharmaceutical care decisions.
 - viii. Apply principles of humanistic outcomes in determining impact of pharmaceutical care services on patient's quality of life.

7. Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.

- A. Comply with federal, state, and local statutes and regulations that affect pharmacy practice.
- B. Apply principles of civil law to the practice of pharmacy.
 - i. Recognize professional practice situations that may give rise to liability under civil law.
 - ii. Predict the likelihood of liability that may arise from errors of omission or commission in professional practice situations involving civil law.
- C. Ensure that medication distribution systems (including Internet sources) provide timely and appropriate pharmacy services.
- D. Identify ethical and moral decisions faced by pharmacists during the medication distribution process.

3. PUBLIC HEALTH Promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at-risk populations, and other members of an interprofessional team of health care providers

1. Assure the availability of effective, quality health and disease prevention services.

- A. Assure access to rational, safe, and cost-effective drug therapy and pharmaceutical care.
 - i. Provide clinical preventive services to improve outcomes and quality of life
 - ii. Educate patients about behaviors that promote health, maintain wellness, prevent and control disease, and reduce health disparities
 - iii. Evaluate the quality and effectiveness of clinical and community-based interventions designed to improve health
 - iv. Use communication strategies strategically to improve health.
- B. Define and assess the health status of individuals and populations, including determinants of health and illness, factors contributing to health promotion and disease prevention, factors influencing the use of health services, and epidemiology (e.g., incidence, prevalence) of diseases.
- C. Assess and monitor at-risk populations to identify and report health problems, and to prioritize interventions

in collaboration with patients, other health professionals, members of the community, and policy makers

D. Select and implement strategies to prevent or detect disease in the target population.

- i. Determine the pharmacist practice activity domains in public health initiatives and responses and promoting safe medication use in society.
 - ii. Formulate strategies to offer disease detection and prevention programs to the public.
 - iii. Implement disease detection and prevention health care services (e.g., smoking cessation, weight reduction, diabetes screening, blood pressure screening, immunization services) to prevent health problems and maintain health.
 - iv. Provide public health related educational material or services tailored to the needs and background of a given audience.
 - v. Identify the roles pharmacists play in emergency preparedness (e.g., bioterrorism and chemical terrorism, natural disasters) and response (e.g., medication dispensing, information provision, vaccination response teams, medical reserve corps) on the local community and national levels. Provide care and evaluate outcomes.
 - vi. Provide patients with access to poison control and treatment information.
- E. Identify methods to ensure that public health initiatives/programs continue to achieve stated goals.
- i. Conduct a continuing assessment of community health assets and needs.
 - ii. Prioritize pharmacy-based programs based on identifiable criteria and standards.
 - iii. Amend existing programs or develop additional services.
 - iv. Recognize the importance of promoting a healthy lifestyle, including the appropriate use of screening tools and immunizations.
 - v. Consult and collaborate with other members of the health care team and public agencies; provide follow-up and referral when necessary.
- F. Evaluate the outcomes of the program/intervention.
- G. Advocate for improved policies that increase access to health services and reduce health risks.

2. Develop strategic efforts to collaborate with policy makers, payers, members of the community, health providers and other stakeholders and decision-makers to promote public health and resolve public health problems.

- A. Collaborate with pertinent local and state organizations, health care providers and policy makers responsible for the development of the public health initiatives and identify methods to stimulate their support.
- B. Synthesize a solution through an action plan in collaboration with community leaders and organizations, such as the following
 - i. Develop a written plan for provision of informational and preventive efforts and identify potential methods and/or plans to generate physical or financial support from internal and external sources.
 - ii. Evaluate the conclusion and action plan to ensure goals will be met.
 - iii. Implement the action plan through collaboration with the ability to provide support for the position taken.
- C. Tailor activities by identifying clinical characteristics of the pharmacy practice and community and learning about diseases associated with the service population and community

3. Carry out duties in accordance with legal, ethical, social, economic, and professional guidelines.

- A. Describe local, state, federal and international regulations affecting public health policy development.
- B. Evaluate and resolve ethical dilemmas that arise in the development of public health policy or find a solution that is acceptable to all parties involved.
- C. Describe legal and ethical implications of intervention in life threatening situations such as poisoning or drug overdose.
- D. Demonstrate the ability to place health care and professional issues within appropriate historical, cultural, social, economic, scientific, political, and philosophical frameworks.
- E. Display a respect and sensitivity for patient and family attitudes, behaviors and lifestyles, paying particular attention to cultural, ethnic and socioeconomic influences and incorporate cultural preferences, spiritual and health beliefs and behaviors into the patient care plan.
- F. Incorporate the needs and perceptions of a culturally diverse society in public health policy.

- G. Apply principles of pharmacoeconomics in public health policy development.
- H. Evaluate public health policy in terms of costs and effectiveness.
- I. Identify and collaborate with appropriate government agencies in the development of public health policy.
- J. Explain the role of professional organizations in the development of public health policy.
- K. Determine how professional standards and guidelines are incorporated into specific public health policies.